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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,831	03/15/2002	Khurram Muhammad	TI-32802	2635

7590 03/14/2005

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EXAMINER	
BEAMER, TEMICA M	

ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/099,831	MUHAMMAD ET AL.	
	Examiner	Art Unit	
	Temica M. Beamer	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/22/2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3-14 and 20-39* is/are allowed.

6)☒ Claim(s) *1, 2, 15-19, 41-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/22/2004 have been fully considered but they are not persuasive.

Applicant argues that Champlin and Marzalek fail to disclose down-conversion. The examiner, however, disagrees. In light of the specification, down-conversion can be performed by a filtering operation (see page 1, lines 15-16 and page 4, lines 1-3). To meet this limitation, Marzalek was combined with Champlin. In col. 8, lines 20-32, Marz alek discloses a sampling signal analyzer and further discloses filtering a sampled signal using a filtering circuit (18A).

Based on the above remarks, the rejections stand as set forth below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Champlin, U.S. Patent No. 6,294,896 in view of Marzalek et al (Marzalek), U.S. Patent No. 5,162,723.

Regarding claims 1 and 19, Champlin discloses obtaining from a first voltage waveform a plurality of temporally distinct samples respectively indicative of areas under corresponding half-cycles of the first voltage waveform (col. 3, lines 25-45, col. 14, lines 8-25); combining the samples to produce the second voltage waveform (col. 3, lines 33-45).

Champlin, however, fails to disclose manipulating the samples to implement a filtering operation such that the second voltage waveform represents a downconverted, filtered version of the first voltage waveform.

In a similar field of endeavor, Marzalek discloses a sampling signal analyzer. Marzalek further discloses manipulating samples to implement a filtering operation such that a second voltage waveform represents a downconverted, filtered version of a first voltage waveform (col. 8, lines 20-32).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Champlin with the teachings of Marzalek for the purpose of producing a desired signal level (Marzalek, col. 8, lines 26-30).

Regarding claim 2, the combination of Champlin and Marzalek discloses the method of claim 1, wherein said obtaining step includes transforming the first voltage waveform into a corresponding current waveform, and integrating each half-cycle of the current waveform (Champlin, col. 14, lines 8-28).

Regarding claim 18, the combination of Champlin and Marzalek discloses the method of claim 1, wherein the first voltage waveform is an RF waveform as evidenced by the fact that any signal can be used (Marzalek, col. 7, lines 35-39).

Regarding claims 15-17, the combination of Champlin and Marzalek discloses the filtering operation/apparatus of claim 1 as described above. The combination, however, fails to disclose the filtering to include FIR, IIR, fractional coefficient filtering, differential coefficient filtering or triangular coefficient filtering.

The examiner contends, however, that these types of filtering are well known in the art, and the examiner takes official notice as such.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Paterson with these types of filters, since they are widely used in removing unwanted signals.

4. Claims s 40, 41, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Champlin and Marzalek in further view of Bazarjani et al (Bazarjani), U.S. Patent No. 6,005,506.

Regarding claims 40 and 41, the combination of Champlin and Marzalek discloses the manipulating of the samples as described above. The combination, however, fails to disclose decimating the samples.

In a similar field of endeavor, Bazarjani discloses a receiver with sigma-delta analog-to-digital converter for sampling received signals. Bazarjani further discloses decimating sampled signals.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of Champlin and Marzalek with the teachings of

Bazarjani since decimating is another filtering technique used to remove unwanted signals.

Regarding claims 42 and 43, the combination of Champlin and Marzalek discloses the method and apparatus of obtaining from a first voltage waveform from a plurality of temporally distinct samples respectfully and downconverting the signals as explained above in claims 1 and 19.

The combination, however, fails to disclose decimating the samples.

Bazarjani discloses a receiver with sigma-delta analog-to-digital converter for sampling received signals. Bazarjani further discloses decimating sampled signals.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of Champlin and Marzalek with the teachings of Bazarjani since decimating is another filtering technique used to remove unwanted signals.

Allowable Subject Matter

5. Claims 3-14 and 20-39 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to suggest or render obvious a method of downconverting a first periodic voltage waveform into a second periodic waveform as described in independent claims 3, 20 and 39.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temica M. Beamer whose telephone number is (703) 306-5837. The examiner can normally be reached on Monday-Thursday (alternate Fridays) 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (703) 306-0003. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Temica M. Beamer
Primary Examiner
Art Unit 2681

3/7/2005